

INTERNATIONAL SEARCH REPORT

International application No.

PCT/JP2004/011291

A. CLASSIFICATION OF SUBJECT MATTER

Int.Cl⁷ A61K9/127, 47/24, 47/26, 47/28, 47/36, 47/42, 7/00, A61P35/00,
A23L1/302, 1/00

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

Int.Cl⁷ A61K9/127, 47/24, 47/26, 47/28, 47/36, 47/42, 7/00, A61P35/00,
A23L1/302, 1/00

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Jitsuyo Shinan Koho 1922-1996 Toroku Jitsuyo Shinan Koho 1994-2004
Kokai Jitsuyo Shinan Koho 1971-2004 Jitsuyo Shinan Toroku Koho 1996-2004

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

CAPLUS (STN), REGISTRY (STN), MEDLINE (STN), BIOSIS (STN), EMBASE (STN)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2003/0143267 A1 (YAMAZAKI, Noboru), 31 July, 2003 (31.07.03), Full text; particularly, Claims 1 to 15; examples 1 to 17 & JP 2003-226638 A & JP 2003-226647 A	1-78
X Y	YAMAZAKI, Noboru et al., Prepatation and Characterization of Neoglycoprotein- liposome conjugates: a promising approach to developing drug deliverly materials applying sugar chain ligands, Trends in Glycoscience and Glycotechnology, 2001, Vol.13, No.71, pages 319 to 329, full text	1-15, 27-41 16-26, 65-78

☒ Further documents are listed in the continuation of Box C.

☐ See patent family annex.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search
20 October, 2004 (20.10.04)

Date of mailing of the international search report
09 November, 2004 (09.11.04)

Name and mailing address of the ISA/
Japanese Patent Office

Authorized officer

Facsimile No.

Telephone No.

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C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	KOLE, Labanyamoy et al., Synergistic effect of interferon- γ and mannosylated liposome-incorporated doxorubisin in the therapy of experimental visceral leishmaniasis, 1999, Vol.180, pages 811 to 820, full text	1-5, 7-9, 27, 29, 32, 34, 35, 37, 38
Y		6, 10-26, 28, 31, 33, 36, 39-41, 65-78
X	JP 2001-81044 A (Tokai University), 27 March, 2001 (27.03.01), Full text; particularly, Claims 1, 2	1-9, 27, 29, 31-34, 37
Y		10-26, 28, 30, 35, 36, 38-41, 65-78
X	TAKEUCHI, Hirofumi et al., Passive targeting of doxorubicine with polymer coated liposomes in tumor bearing rat, Biol.Pharm.Bull., 2001, Vol. 24, pages 795 to 799, full text	42, 43, 45, 48, 50, 57, 58, 60-62, 64
Y		44, 46, 47, 49, 51-56, 59, 63
X	KAMPS, Jan A.A.M. et al., Massive targeting of liposomes, surfase-modified with anionized albumins, to hepatic endothelial cells, Proc. Natl.Acas.Sci. U.S.A., 1997, Vol.94, pages 11681 to 11685, full text	42-45, 50
Y		46-49, 51-64
X	HONG, Ruey-Long et al., Direct comparison of liposomal doxorubicin with or without polyethylene glycol coating in C-26 tumor-bearing mice: Is suface coating with polyethylene glycol beneficial?, Clinical Cancer Research, 1999, Vol.5, pages 3645 to 3652, full text	42, 43, 45, 48, 57, 58, 60-62, 64
Y		44, 46, 47, 49-56, 59, 63

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Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:

because they relate to subject matter not required to be searched by this Authority, namely:

2. ☐ Claims Nos.:

because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:

3. ☐ Claims Nos.:

because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:
(See extra sheet.)

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.

2. ☒ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.

3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:

4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

☐ The additional search fees were accompanied by the applicant's protest.

☐ No protest accompanied the payment of additional search fees.

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Continuation of Box No.III of continuation of first sheet (2)

It appears that the special technical feature of the invention according to claim 1 relating to "a sugar chain-modified liposome having a sugar chain bound to the liposome membrane" resides in bonding sugar chain to the liposome membrane, while the special technical feature of the invention according to claim 42 relating to "a liposome wherein the liposome membrane has been made hydrophilic and no sugar chain is bound to the surface thereof" resides in making the liposome membrane hydrophilic without binding to any sugar chain. Thus, no technical feature common to them can be found.

Such being the case, these inventions are not considered as being so linked as to form a single general inventive concept.